Docket No. 2098-117 **PATENT**

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Gregory K. Jones	:	Confirmation No.: 3508
Serial No.:	10/622,790	:	Group Art Unit: 1771
Filing Date:	July 18, 2003	:	Examiner: Ula C. Ruddock

For: **Breathable Materials Comprising Low-Elongation Fabrics, and Methods**

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This Reply Brief is being filed pursuant to the provisions of 37 CFR §41.41(a)(1) in response to the Examiner Answer mailed January 7, 2008. Arguments responsive to the issues raised in the Answer are set forth below. Pursuant to §41.43(a)(1), the Examiner is requested to acknowledge receipt and enter the reply brief.

I. STATUS OF THE CLAIMS

Claims 1-29 are pending. Claims 19-25, 28 and 29 are withdrawn as relating to a non-elected invention. Claims 1-18, 26 and 27 are rejected and the subject of the present Appeal.

II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-18, 26 and 27 under 35 U.S.C. §103(a) as being obvious and unpatentable over the Gardner et al U.S. Patent Publication No. 2002/0071944 in view of the Carroll et al U.S. Patent Publication No. 2004/0023585 or the Sheth U.S. Patent No. 4,929,303.

III. ARGUMENTS

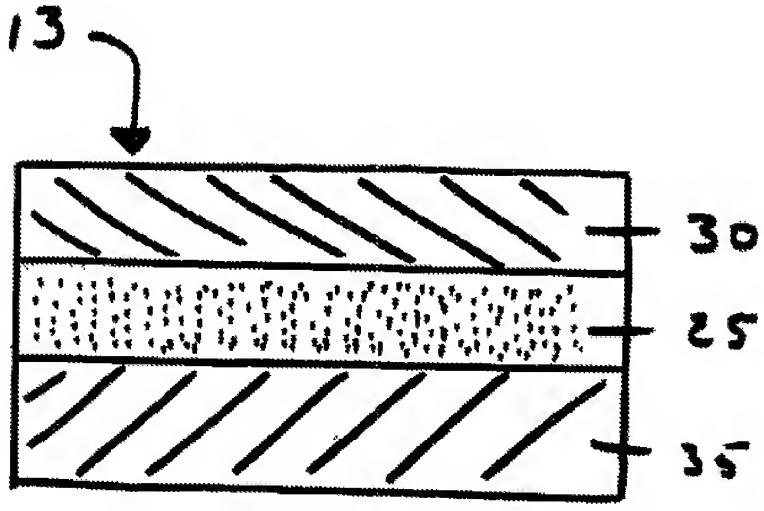
The Appellant wishes to generally address the assertions made in the Examiner Answer, specifically Section (10): Response to Argument, starting on page 4 of the Examiner Answer.

Appellant refutes Examiner's assertion that Appellant is arguing references separately. As shown in further detail below, Appellant asserts that the proposed combinations of Gardner and Carroll, or Gardner and Sheth fail to teach or suggest all elements of independent claims 1 and 15 and all claims dependent thereon.

Gardner is cited for teaching a breathable housewrap material comprising a non-woven fabric layer and a film layer, wherein the film layer comprises high density polyethylene (HDPE) and a calcium carbonate ($CaCO_3$) filler. The Examiner alleges that the Gardner film layer teaches a microporous coating comprising a crystalline polymer composition and a filler as recited in claim 1, or a microporous coating comprising high density polyethylene and a filler as recited in claim 15. As set forth at page 6 of the specification, crystalline polymer composition is defined as a polymer composition (e.g., high density polyethylene) having greater than 50% of the polymer components in crystalline form.

The Examiner asserts that Gardner teaches all elements except a low-elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction as recited in claim 1. The Examiner further acknowledges that Gardner also does not disclose that the low elongation fabric layer is a polyolefin cross-laminated open mesh as recited in claim 3.

Noting these deficiencies, the Examiner combines the fabric layers of Carroll or Sheth with the HDPE/$CaCO_3$ film of Gardner, even though none of the references suggest the combination. Referring to FIG. 1 below, the Carroll composite 13 has a barrier layer 25 laminated onto the fabric layer 30, and a scrim 35 laminated to provide strength to the composite 13.



The Carroll reference teaches that CLAF®, a polyethylene cross laminated open mesh is present in the **scrim layer 35, not the fabric layer 30.** There is no teaching in Carroll that CLAF® may be used in the fabric layer 30. Furthermore, there is no teaching in Carroll that the scrim layer 35 could function as the fabric layer 35, since it is added after the breathable composite is formed.

Referring to FIG. 2 and paragraphs [0061]-[0063], the Carroll composite is formed by extrusion laminating the polyethylene film to a fabric layer to form a laminate, and then incrementally stretching the laminate to form the breathable composite. After the breathable composite is formed, the scrim layer 35 is added to the composite, because it may act as a strength enhancing substrate. (*See* paragraphs [0064] and [0065]). As a result, Carroll fails to teach a low-elongation fabric layer comprising a polyolefin cross-laminated open mesh such as CLAF®, or a low elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction. As a result, Carroll fails to cure the above noted deficiencies of Gardner.

Furthermore, one of ordinary skill in the art would not be led to cure the deficiencies of Gardner or Carroll by consulting the teachings of Sheth. Sheth teaches a composite comprising a breathable polyolefin film heat laminated to a nonwoven HDPE fabric. (*See* Abstract). The nonwoven fabric is made by cross-laminating HDPE fibers at the crossing points to form a thin open mesh fabric. *Id.* Sheth fails to teach a breathable film comprising HDPE, and in fact is directed primarily to low density polyethylene (LDPE) films. (Col. 3, line 20). Sheth states that LDPE is a preferred polyolefin film for the laminate, because of its *high tear strength.* (Col. 3, lines 20-23). As shown throughout Sheth, high tear strength, which is defined as resistance to tearing of a film, is an important consideration, when forming the Sheth composite. (*See e.g.* lines 56-58; col. 4, lines 26-28; col. 9, lines 23-31). Sheth requires stretching in both the machine and transverse directions[1], consequently, a LDPE film with high tear strength or resistance to tearing is desirable to prevent damaging of the film and the composite thereof during stretching.

[1] Col. 6, lines 3-7

As would be familiar to one of ordinary skill in the art, density and crystallinity are directly related. Thus, HDPE, which has a high density, has a high crystallinity, and LDPE, which has a low density, has a low crystallinity. As would be further known to one of ordinary skill in the art, crystallinity and tear strength are inversely related. Thus, HDPE has high crystallinity and density, and consequently a *low tear strength*, whereas LDPE has low crystallinity and density, and consequently a high tear strength as required by Sheth for composite formation.

Because Sheth requires its nonwoven fabric layer to be laminated to high tear strength, low crystallinity polyolefins such as LDPE, Sheth teaches away from combining the Sheth cross laminated open mesh fabric layer with the *low tear strength* HDPE film as taught by Gardner. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Sheth requires a high tear strength polyolefin such as LDPE, because of the rigorous stretching process used in forming a composite. If the Gardner HDPE film was combined with Sheth's polyolefin open mesh fabric layer, it is likely that Sheth's process would render inoperable the HDPE film and the composite therewith. As a result, Sheth would lead one of ordinary skill away from combining Sheth's cross laminated polyolefin open mesh fabric layer with the Gardner HDPE film to teach the breathable material of the present claims. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Consequently, by citing an improper combination (Gardner and Sheth), the Examiner has failed to establish a prima facie case of obviousness.

Additionally, assuming *arguendo* that Carroll's CLAF® scrim layer is a fabric layer as the Examiner asserts, Sheth also teaches away from combining Carroll's CLAF® scrim layer with Gardner's HDPE film, because Sheth suggests this combination of a low tear strength HDPE film and a CLAF® fabric layer does not produce a suitable composite. As a result, one of ordinary skill in the art would not combine Gardner and Carroll, even if Carroll did teach a low-elongation fabric layer comprising a polyolefin cross-laminated open mesh such as CLAF®, or a low elongation fabric layer exhibiting less than about 30% elongation as measured according to ASTM D5034 in at least one direction as claimed.

In addition to the improper combinations asserted by the Examiner, the present claims are directed to a material which yields unexpected benefits. As the Supreme Court stated in *KSR International Co. v. Teleflex Inc.*, the fact that elements work together in an unexpected and fruitful manner supports the conclusion that a combination is not obvious to those skilled in the art. 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1385 (2007). The breathable material of claim 1 or the breathable housewrap material of claim 15 requires the combination of a low elongation fabric layer and a coating comprising a crystalline polymer composition (or HDPE) and a filler which work together in an unexpected and fruitful manner to provide a breathable material when subjected to a relatively small degree of stretching which is tolerated by the low elongation fabric layer. Examples 1 and 2 on page 12-14 of the present application provide further demonstration of unexpected benefits (e.g., increased porosity and air permeability using low elongation fabrics).

Accordingly, the rejection under 35 U.S.C. §103 should be reversed. Favorable action by the Board is respectfully requested.

Respectfully submitted,

DINSMORE & SHOHL LLP

By __/Matthew A. Molloy/_____
Matthew A. Molloy
Registration No. 56,415

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402
Telephone: (937) 449-6400
Facsimile: (937) 449-6405
E-mail: matthew.molloy@dinslaw.com
MAM/tlo